

IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Jeffrey L. Deeney

Confirmation No.:

Application No.: 09/992,864

Examiner:

Filing Date: 11/16/01

Group Art Unit:

Title: METHOD AND APPARATUS FOR SUPPORTING CIRCUIT COMPONENT HAVING SOLDER COLUMN ARRAY INTERCONNECTS USING INTERPOSED SUPPORT STRUCTURES

COMMISSIONER FOR PATENTS

Washington, D.C. 20231

TRANSMITTAL LETTER FOR RESPONSE/AMENDMENT

Sir:

Transmitted herewith is/are the following in the above-identified application:

- ( ) Response/Amendment ( ) Petition to extend time to respond  
( ) New fee as calculated below ( ) Supplemental Declaration  
( ) No additional fee (Address envelope to "Box Non-Fee Amendments")  
(X) Other: Supplement to IDS filed Nov. 16, 01 and postcard. (fee \$ )

CLAIMS AS AMENDED BY OTHER THAN A SMALL ENTITY						
(1) FOR	(2) CLAIMS REMAINING AFTER AMENDMENT	(3) NUMBER EXTRA	(4) HIGHEST NUMBER PREVIOUSLY PAID FOR	(5) PRESENT EXTRA	(6) RATE	(7) ADDITIONAL FEES
TOTAL CLAIMS		MINUS		= 0	X \$18	\$ 0
INDEP. CLAIMS		MINUS		= 0	X \$84	\$ 0
[ ] FIRST PRESENTATION OF A MULTIPLE DEPENDENT CLAIM					+ \$280	\$ 0
EXTENSION FEE	1ST MONTH \$110.00	2ND MONTH \$400.00	3RD MONTH \$920.00	4TH MONTH \$1440.00		\$ 0
OTHER FEES						\$
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT						\$ 0

Charge \$ 0 to Deposit Account 08-2025. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231.

Date of Deposit: 11-25-02

Typed Name: Jennifer Yap

Signature: *Jennifer Yap*

Respectfully submitted,

Jeffrey L. Deeney

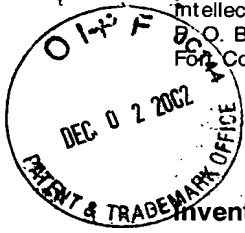
By: *na, Full III*

Roland A. Fuller III

Attorney/Agent for Applicant(s)

Reg. No. 31,160

Date: 11-25-02



IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Jeffrey L. Deeney

Confirmation No.:

Application No.: 09/992,864

Examiner:

Filing Date: 11/16/01

Group Art Unit:

Title: METHOD AND APPARATUS FOR SUPPORTING CIRCUIT COMPONENT HAVING SOLDER COLUMN ARRAY INTERCONNECTS USING INTERPOSED SUPPORT SHIMS

COMMISSIONER FOR PATENTS

Washington, D.C. 20231

SECOND SUPPLEMENTAL  
INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or  
(Within three months of filing national application; or date of entry of national application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97 (c) together with either a:  
☐ Statement under 37 CFR 1.97(e), or  
☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97 (d) together with a:  
☐ Statement under 37 CFR 1.97(e), and  
☐ a petition under 37 CFR 1.97(d)(2), and  
☐ a \$180.00 petition fee set forth in 37 CFR 1.17(p).  
(Filed after final action or notice of allowance, whichever occurs first, but before payment of the issue fee)

Please charge to Deposit Account 08-2025 the sum of \$0.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 08-2025 pursuant to 37 CFR 1.25.

☒ Applicant(s) submit herewith Form PTO 1449 - Information Disclosure Citation together with copies, of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

☐ A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individuals(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

It is requested that the information disclosed herein be made of record in this application.

☒ I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231. Date of Deposit: 11-25-02

OR

☐ I hereby certify that this paper is being transmitted to the Patent and Trademark Office facsimile number \_\_\_\_\_ on \_\_\_\_\_

Number of pages:

Typed Name: Jennifer Yap

Signature: Jennifer Yap

Respectfully submitted,

Jeffrey L. Deeney

By R. A. Fuller III

Roland A. Fuller III

Attorney/Agent for Applicant(s)

Reg. No. 31,160

Date: 11-25-02



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: 09/992,864

Filing Date: 11/16/01

Applicant: Jeffrey L. Deeney

Title: METHOD AND APPARATUS FOR  
SUPPORTING CIRCUIT COMPONENT HAVING  
SOLDER COLUMN ARRAY INTERCONNECTS  
USING INTERPOSED SUPPORT SHIMS

Attorney Docket: 10015588-1

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Commissioner of Patents and Trademarks  
Washington, D.C. 20231

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**SUPPLEMENT TO INFORMATION DISCLOSURE STATEMENT FILED**  
**NOVEMBER 16, 2001**

Applicants' supplement the IDS filed November 16, 2001 as follows:

The patent applications listed as items 1S, 2Q and 2R on form 1449 to the IDS filed November 16, 2001 were assigned the following serial numbers subsequent to the filing of the IDS:

1S Thomas J. Augustin et al., patent application filed on November 16, 2001 titled Method And Apparatus For Shock And Vibration Isolation of a Circuit Component, Attorney Docket No. 10014433-1, Pages 1-15 and 2 sheets of drawings. Serial No. 09/990,819.

2Q Jeffrey L. Deeney et al, patent application filed on November 16, 2001 titled Method And Apparatus Of Supporting Circuit Component Having A Solder Column Array Using Interspersed Rigid Columns, Attorney Docket No. 10015587-1, Pages 1-9 and 1 sheet of a drawing. Serial No. 09/991,430.

2R Jeffrey L. Deeney et al., patent application filed on November 16, 2001 titled Method And Apparatus For Supporting A Circuit Component Having A Solder Column Interconnects Using An

External Support, Attorney Docket No. 10015590-1, Pages 1-15 and 2  
sheets of drawings. Serial No. 09/994,004.

The paper listed as item 1Q (Thomas P. Dolbear et al., Effect of Mechanical Shock and Vibration on the Second-level Temperature Cycling Reliability of Ceramic Ball Grid Arrays with a Continuous Compressive Load Applied) was included in the Proceedings of IMAPS, October, 1997.

The paper listed as item 1R (R. Bargerhuff et al., Development of a Large Heatsink Support Structure) was given to applicants prior to the invention. However, applicants have not been able to determine whether it was ever published.

Respectfully submitted,

Dated: Nov. 25, 2002

By: R. A. Fuller III  
Roland A. Fuller III  
Reg. No. 31,160

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FORM PTO-1449

ATTY. DOCKET NO.

10015588-1

APPLICATION NO.

09/992,864

CONFIRMATION NO.

APPLICANT

Jeffrey L. Deeney

FILING DATE

11/16/01

GROUP

LIST OF PATENTS AND PUBLICATIONS FOR  
APPLICANT'S INFORMATION DISCLOSURE  
STATEMENT

(Use several sheets if necessary)

## REFERENCE DESIGNATION

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	1A	4,164,003	8/7/1979	Cutchaw	
	1B	4,581,680	4/8/1986	Garner	
	1C	4,886,571	12/12/1989	Suzuki et al.	
	1D	5,239,198	8/24/1993	Lin et al.	
	1E	5,905,636	5/18/1999	Baska et al.	
	1F	5,956,576	9/21/1999	Toy et al.	
	1G	5,978,229	11/2/1999	Kim	
	1H	5,990,418	11/23/1999	Bivona et al.	
	1I				
	1J				
	1K				

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBLICATION DATE	NAME OF PATENTEE OR APPLICANT	Pages/Columns/Lines Where Relevant Passages/Figures Appear	Check if Translation attached
	1L					
	1M					
	1N					
	1O					
	1P					

## OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

	1Q	
	1R	
	1S	

EXAMINER

DATE CONSIDERED